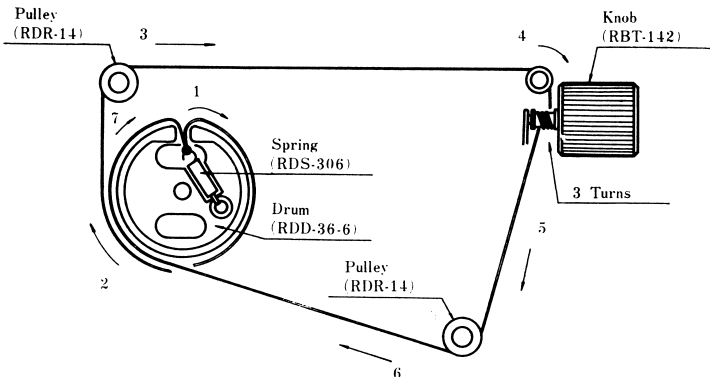


Fig. 5 Component View - Alignment Points.

**Notes:**

1. Arrow marks (1~7) indicate correct order and direction of stringing dial cord.
2. Tuning gang is positioned at maximum capacity.
3. Cement dial cord ends.
4. Dial cord length is 70cm (27½").



**To Mount Dial Pointer**

1. Set tuning gang fully closed position.
2. Set dial pointer to start point "O" mark of Dial Scale.
3. Fasten dial cord to dial pointer.

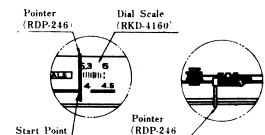


Fig. 6 Top View - Chassis Disassembly Points.

**ALIGNMENT INSTRUCTIONS**

**Model R-225H**

Output of signal generator should be no higher than necessary to obtain an output reading.  
Set volume control to maximum.  
Set tone switch to high.  
Set power source voltage to 4.5 volts DC.

Band Switch Position	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kc/s (400~ Mod.)	Point of non-interference. (on/about 600kc/s)	Output meter across earphone jack.	T <sub>3</sub> (3rd IFT) T <sub>2</sub> (2nd IFT) T <sub>1</sub> (1st IFT)	Adjust for maximum output.
2	"	550 kc/s (400~ Mod.)	550 kc/s	"	L <sub>3</sub> (OSC Coil) L <sub>1</sub> (ANT Coil)	Adjust for maximum output by sliding coil (L <sub>1</sub> ) along ferrite core.
3	"	1500 kc/s (400~ Mod.)	1500 kc/s	"	C <sub>14</sub> (OSC Trimmer) C <sub>3</sub> (ANT Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).
4	High side thru. 10PF to EXT ANT Jack. Common to Chassis.	3.9 Mc/s (400~ Mod.)	3.9 Mc/s	"	L <sub>4</sub> (OSC Coil) L <sub>2</sub> (ANT Coil)	Adjust for maximum output by sliding coil (L <sub>2</sub> ) along ferrite core.
5	"	12 Mc/s (400~ Mod.)	12 Mc/s	"	C <sub>10</sub> (OSC Trimmer) C <sub>5</sub> (ANT Trimmer)	Adjust for maximum output. Repeat steps (4) and (5).

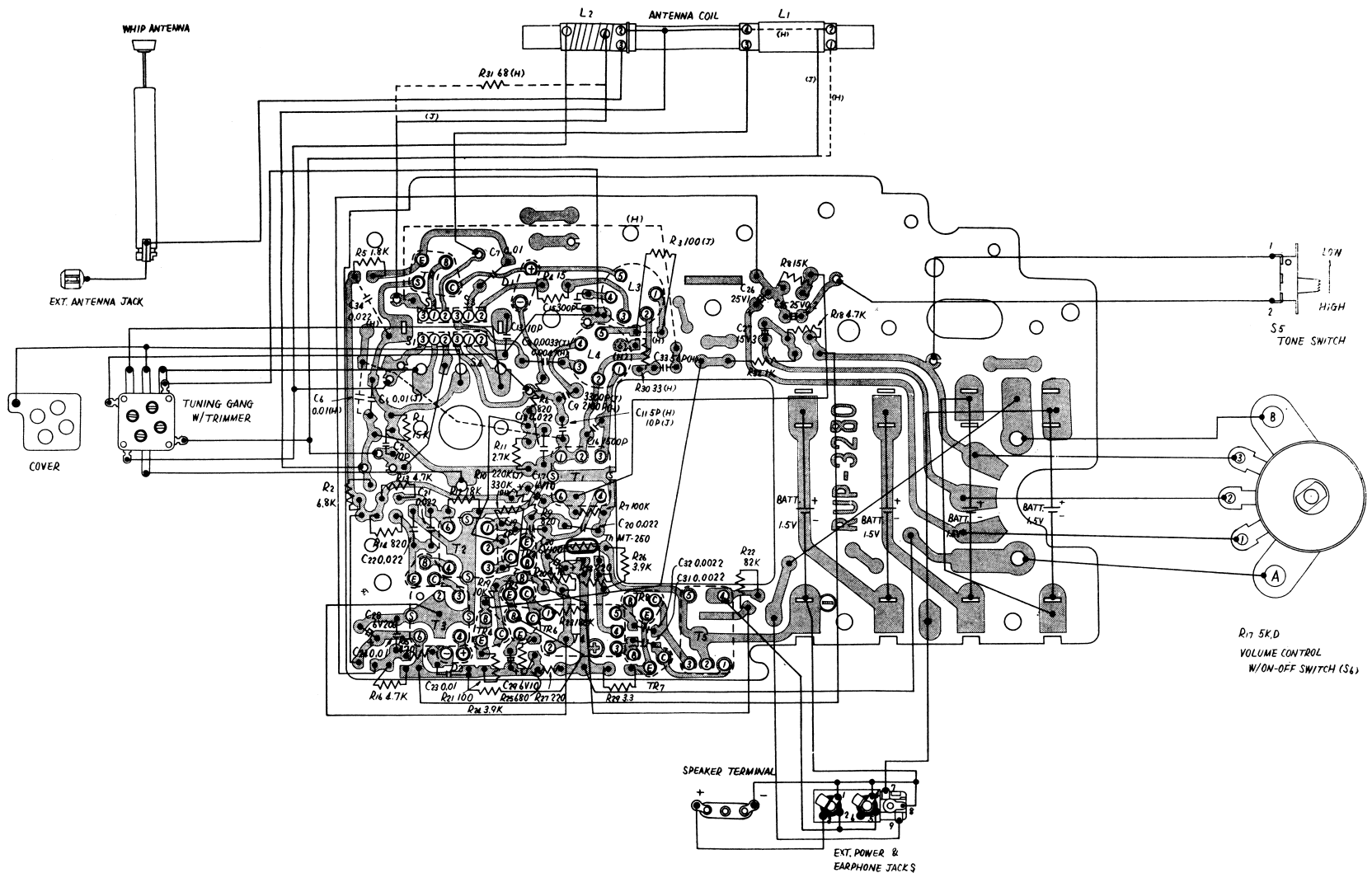
**Note:** Cement antenna bobbin with wax after completing alignment.

**Model R-225J**

Output of signal generator should be no higher than necessary to obtain an output reading.  
Set volume control to maximum.  
Set tone switch to High.  
Set power source voltage to 4.5 volts DC.  
Set fine tuning control to center.

Band Switch Position	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kc/s (400~ Mod.)	Point of non-interference (on/about 600 kc/s)	Output meter across earphone jack	T <sub>3</sub> (3rd IFT) T <sub>2</sub> (2nd IFT) T <sub>1</sub> (1st IFT)	Adjust for maximum output.
2	"	550 kc/s (400~ Mod.)	550 kc/s	"	L <sub>3</sub> (OSC Coil) L <sub>1</sub> (ANT Coil)	Adjust for maximum output by sliding coil (L <sub>1</sub> ) along ferrite core.
3	"	1500 kc/s (400~ Mod.)	1500 kc/s	"	C <sub>14</sub> (OSC Trimmer) C <sub>3</sub> (ANT Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).
4	Connect to EXT Antenna Jack & Chassis thru. 10PF SW Dummy Antenna.	5.9 Mc/s (400~ Mod.)	5.9 Mc/s	"	L <sub>4</sub> (OSC Coil) L <sub>2</sub> (ANT Coil)	Adjust for maximum output by sliding coil (L <sub>2</sub> ) along ferrite core.
5	"	18 Mc/s (400~ Mod.)	18 Mc/s	"	C <sub>10</sub> (OSC Trimmer) C <sub>5</sub> (ANT Trimmer)	Adjust for maximum output. Repeat steps (4) and (5).

**Note:** Cement antenna bobbin with wax after completing alignment.



**Notes:**

1. All resistor values in ohms (K=1000 $\Omega$ ).
2. All capacitor values in micro farads (P= $\mu$ F).
3. Schematic diagram shows both of Models R-225H and R-225J.  
Model R-225H is different from Model R-225J, and difference of Model R-225H is shown in dotted line.

Fig. 8 Circuit Board Wiring View (Conductor Side).

TR<sub>1</sub>  
**2SA341**  
CONV.

D<sub>1</sub>  
**0A90**  
D. AGC

TR<sub>2</sub>  
**2SA101**  
1st IF AMP

TR<sub>3</sub>  
**2SA101**  
2nd IF AMP

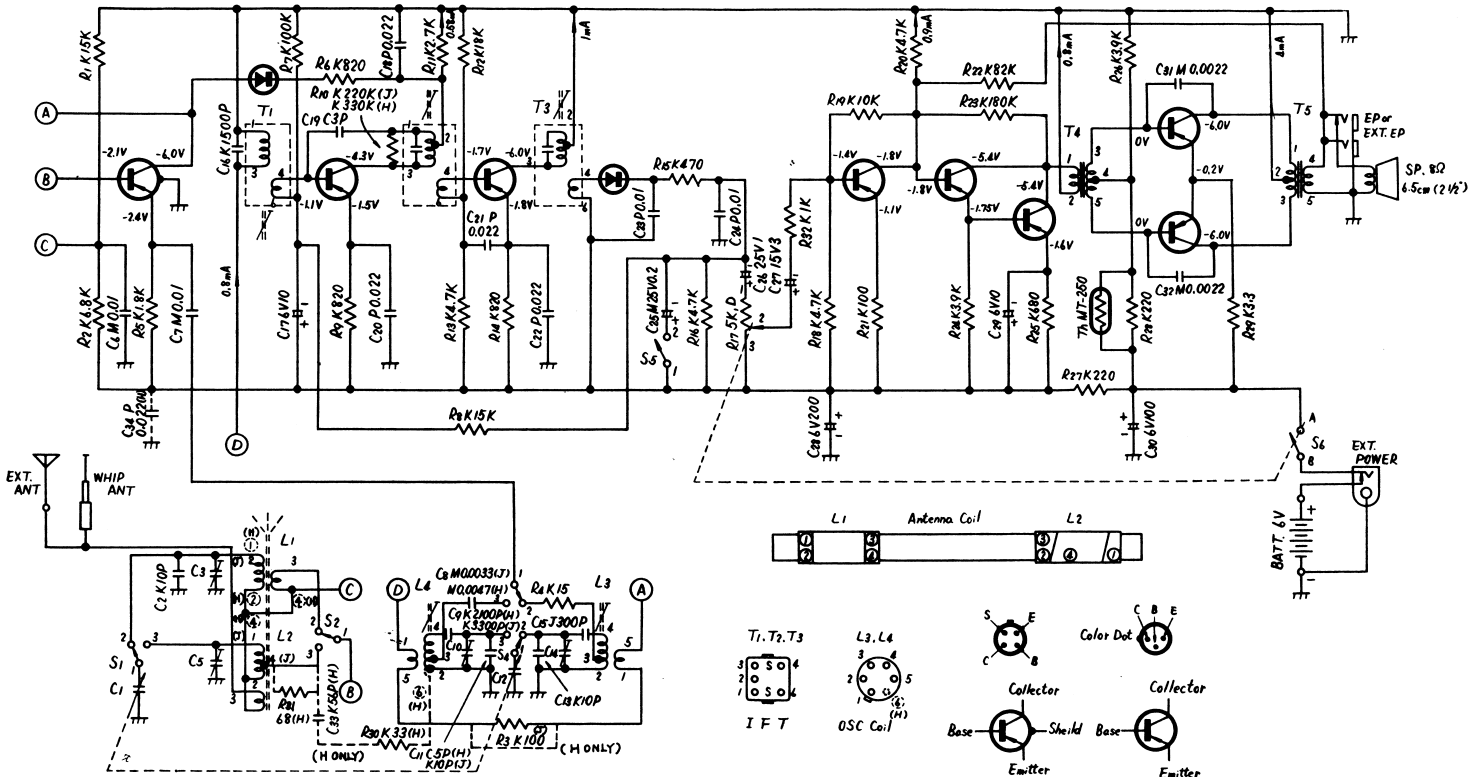
D<sub>2</sub>  
**0A70**  
DET. & AGC

TR<sub>4</sub>  
**2SB173**  
1st AF AMP

TR<sub>5</sub>  
**2SB175**  
2nd AF AMP

TR<sub>6</sub>  
**2SB175**  
3rd AF AMP

TR<sub>7</sub> & TR<sub>8</sub>  
**2SB176 × 2**  
POWER AMP



**Notes:**

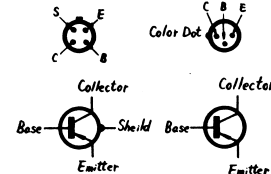
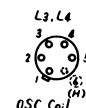
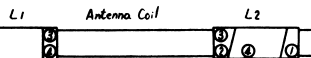
1. S<sub>1</sub> ~ S<sub>4</sub>: Band selector switch in "MW" position.
2. S<sub>5</sub>: Tone switch in "HIGH" position.
3. S<sub>6</sub>: Power source switch in "OFF" position.
4. DC voltage measurements are taken with circuit tester (10KΩ/V).
5. Measured voltages for TR<sub>1</sub> ~ TR<sub>6</sub> are from transistor terminal to positive terminal of battery.
6. Capital letters (M, K, J, P, C) in the circuit diagram show allowable tolerances of resistors and capacitors as follows:

M = ±20% K = ±10% J = ±5% P = +100% C = ±0.25PF

7. Battery current: No signal..... 16mA  
Maximum output..... 110mA

8. PF = pico farad = mmf  
μF = micro farad = MF

9. Schematic diagram show both of Model R-225H and R-225J. Model R-225H is different from Model R-225J, and difference of Model R-225H is shown in dotted line.



MODEL R-225H or J

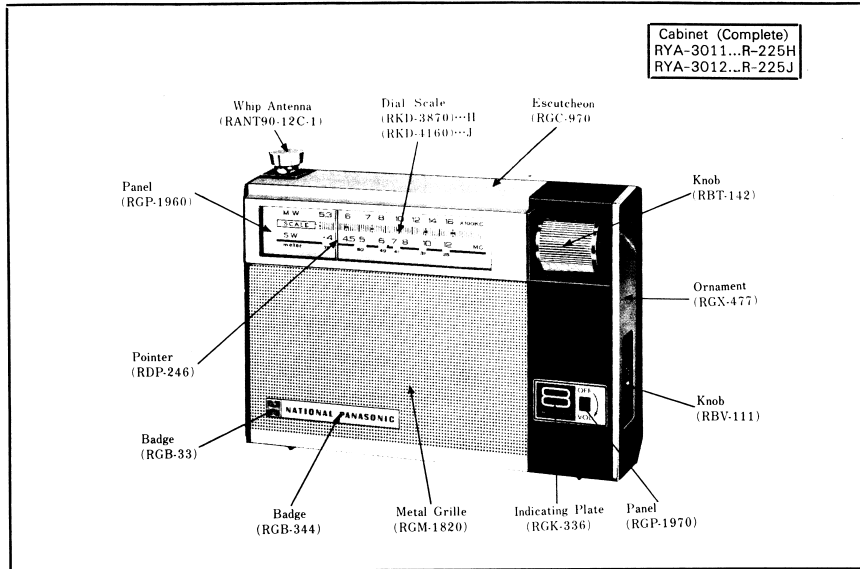
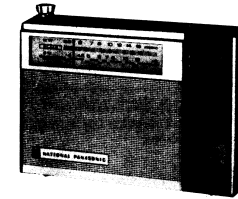


Fig. 1 Cabinet & Appearance - Parts Identification.

**NATIONAL PANASONIC**  
**Service Manual**

**2-BAND 8-TRANSISTOR PORTABLE RADIO**

**MODEL R-225H or J**



**To Remove Chassis (Refer to Fig. 2)**

1. Remove cabinet back cover with cabinet back cover screws.
2. Remove red chassis mounting screws, Nos. 1~4, as illustrated in Fig. 2.
3. To remove chassis completely, remove antenna plug from cabinet and unsolder leadwires to speaker terminals.
4. To reassemble, reverse the above procedure.

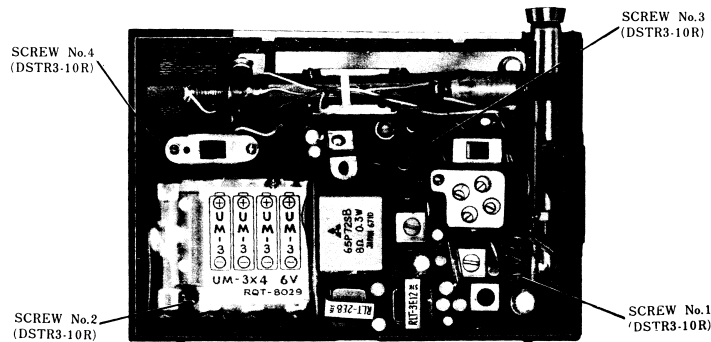


Fig. 2 Top View - Disassembly Points.

**SPECIFICATIONS**

Frequency Range :	MW 525~1605 kc/s (571~187m) SW 3.9~12 Mc/s (76.9~25m)...Model R-225H 5.9~18 Mc/s (50.8~16.7m)...Model R-225J
Intermediate Frequency :	455 kc/s
Transistors :	2SA341 Converter 2SA101 1st IF Amplifier 2SA101 2nd IF Amplifier 2SB173 1st AF Amplifier 2SB175 2nd AF Amplifier 2SB175 3rd AF Amplifier 2SB176 Power Amplifier
Diodes :	O A 7 0 D. AGC O A 7 0 Detector & AGC
Sensitivity :	MW 50μV/m for 50mW Output SW 50μV/m for 50mW Output...Model R-225H 70μV/m for 50mW Output...Model R-225J
Power Output :	200mW Undistorted 350mW Maximum
Speaker :	6.5cm (2½")PM Dynamic Speaker
Batteries :	Four "AA" size penlight batteries, 6V (NATIONAL UM-3 or equivalent)
Cabinet Dimensions :	155(Wide)×109(High)×40(Deep) mm (6¼"×4½"×1½")
Weight :	590g (1 lb. 5 oz.) with batteries